

## **REMARKS**

In response to the Final Office Action dated March 4, 2010, Applicants respectfully request reconsideration based on the above claim amendments and the following remarks. Applicants respectfully submit that the claims as presented are in condition for allowance.

Claims 1-5, 7-14 and 16-19 are pending in the present Application. Claims 3-5, 7-14 and 16 are withdrawn as being directed to non-elected subject matter in the June 27, 2007 response to Restriction Requirement of June 12, 2007. Claims 6 and 15 were cancelled response to the non-final office action of August 21, 2009. Claim 1 is amended, leaving Claims 1, 2 and 17-19 for consideration upon entry of the present amendment and following remarks.

In the claimed invention, the first and second micro-valves are used for controlling opening and closing of the inlet and the outlet of a PCR channel. In other words, the first and second micro-valves are used as valves for the inlet and the outlet of the PCR channel.

Therefore, it is apparent to those skilled in the art from the whole description of the specification that no additional valve means for the inlet and the outlet other than the first and second micro-valves is required, and accordingly, that an additional valve means for the inlet and the outlet other than the first and second micro-valves is absent. Support for this amendment can be found in the Figure 2 or 4 where it may be seen that there is no additional valve means for the inlet and the out other than the first and second micro-valves.

No new matter has been introduced by these amendments. Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

### **Claim Rejections Under 35 U.S.C. §102(b)**

Claims 1, 2, and 17-19 are rejected under 35 U.S.C. §102(b) as being allegedly anticipated by Wilding et al., U.S. Patent No. 5,587,128 (hereinafter "Wilding"). (See Office Action dated 05-04-2010, page 4)

To anticipate a claim under 35 U.S.C. § 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988).

Claim 1 as presently amended is directed to a PCR (polymerase chain reaction) device comprising an inlet through which a biochemical fluid is injected; an outlet through which the biochemical fluid is discharged; a PCR channel positioned between the inlet and the outlet; a heat source for operating the PCR device; and first and second micro-valves which is formed as channel for containing a sol-gel transformable material, wherein the first and second micro-valves control opening and closing of the inlet and the outlet, and intersect portions of the PCR channel near the inlet and the outlet of the PCR device, respectively; wherein the sol-gel transformable material transforms from a sol state into a gel state at a temperature lower than DNA denaturation temperature, annealing temperature and extension temperature and higher than room temperature, as the temperature increases to operate the PCR by the heat source; and is operative to control the opening and closing of the first and second micro-valves; wherein an additional heat source for controlling the temperature of the sol-gel transformable material is absent from the PCR device; and wherein an additional valve means for the inlet and the outlet other than the first and second micro-valves is absent.

The invention of Claim 1 thus has first and second micro-valves which are formed as channel. The first and second micro-valves are used as valves for the inlet and the outlet of the PCR channel. Therefore, no additional valve means for the inlet and the outlet other than the first and second micro-valves is required.

Wilding discloses a megascale polynucleotide amplification device. The Examiner has stated that port 16A and port 16D of Wilding correspond to the inlet and the outlet of the claimed invention. (See Office Action dated 03-04-2010, page 3) However, as described in Wilding, port 16C is used to vent the system or deliver Taq polymerase, etc. (col. 24, lines 9-12).

In particular, Wilding discloses valves that allow the ports 16A, 16B, 16C and 16D to be opened and closed (col. 23 lines 37-39). These valves are provided in the appliance shown in Fig. 6A, 50 (col. 25 lines 6-7). It means that the ports 16A and 16D contain additional valves for controlling the ports. The claimed invention as presently amended has no additional valve means for the inlet and the outlet other than the first and second micro-valves.

For this reason at least, the invention of Claim 1 is different from the invention of Wilding. The Applicants believe that Wilding therefore cannot anticipate the claimed invention.

The Applicants respectfully request a withdrawal of the anticipation rejection and an allowance of the claims.

**Conclusion**

In view of the foregoing, it is respectfully submitted that the instant application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance issued. If the Examiner believes that a telephone conference with Applicants' attorneys would be advantageous to the disposition of this case, the Examiner is cordially requested to telephone the undersigned.

In the event the Commissioner of Patents and Trademarks deems additional fees to be due in connection with this application, Applicants' attorney hereby authorizes that such fee be charged to Deposit Account No. 06-1130.

Respectfully submitted,

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